July -August 2003

News

AEROSPACE EDUCATION

Inspiring Students to Excel

IN THIS ISSUE

Topics of Interest

Aerospace Education News is the official bi-monthly publication of the Civil Air Patrol and is produced by the Leadership Development and Membership Services Directorate, CAP National Headquarters, Maxwell AFB, Alabama.

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AE DEBUTS NEWSLETTER

Welcome to the debut of your Civil Air Patrol Aerospace Education newsletter dedicated to the CAP Aerospace Education Members (AEMs) and the Aerospace Education Officers (AEOs). We are pleased to introduce a new format with information that we hope you will enjoy using and sharing with colleagues. If you have any suggestions or contributions, please send them to **jstone@capnhq.gov** and we will gladly take them into consideration. We congratulate you and thank you for all you do for the youth of this nation to ensure the strength and future of aviation and aerospace.

Judy Stone, Editor

CAP Executive Director, Col. Al Allenback, USAF (Ret.) is pictured in front of the 1902 Wright Glider replica with Rob Smith and Dan Daniel who portrayed the Wright brothers at NCASE 2003.

FROM THE COCKPIT

Dear Aerospace Education Members and Officers,

Thank you for being part of Civil Air Patrol's outstanding aerospace education program during the most exciting time in CAP's recent history. Not only is Civil Air Patrol the fastest growing non-profit organization in the country, our members are producing award winning aerospace products and stepping out on the cutting edge of technology!

In the past year, CAP has been recognized with the National Aeronautical Association Frank G. Brewer Trophy, the Air Force Association Vandenberg Award, the Space Foundation Award for Educational Achievement, and the George Haddaway Medal for Aviation Excellence. In addition to these honors, several organizations have partnered with CAP in an effort to increase outreach to communities across the nation. The National Aeronautics and Space Administration, Air Force Association/Aerospace Education Foundation, American Institute of Aeronautics and Astronautics, Challenger Center, Federal Aviation Association, and 4-H are just a few of the organizations that CAP is working closely with to make the aerospace education program even bigger and better!

Thank you again for your tireless support and remember to tell friends, family and colleagues about CAP!

Al Allenback
Colonel, USAF (Ret.)
Executive Director

NASA AND CAP COLLABORATE

NASA, as a member of the U.S. Centennial of Flight Commission (established by Congress in 1998), is working in collaboration with the Civil Air Patrol. Each organization has developed a vast array of resources, supplemental materials, activities, and research tools to enhance math, science, and technology curriculum for educators and students. *The Wright Brothers: from Bicycles to Airplanes* thematic unit is an educational product that CAP has developed for the education community and includes information, ideas, and activities provided by NASA. It exemplifies how both organizations are working together in partnership. NASA and CAP's materials are being disseminated through each other's networks. Networks include education workshops and conferences, such as the National Congress on Aviation and Space Education (NCASE).

In honor of the Centennial of Flight and the tremendous learning opportunities it presents, consider participating in the Centennial of Flight celebrations. Explore the many exciting projects and events that are being planned to commemorate the 100th anniversary of flight and perhaps plan your own. To learn about what will be taking place around the country and the world between now and 2004, visit the Centennial of Flight Commission's website at:

www.centennialofflight.gov.

In addition to a searchable calendar of events, the site provides access to a comprehensive collection of educational and historical resources that can be used to teach what you expect your students to learn.

Take advantage of the wonderful resources provided by NASA and CAP. Inspire students to pursue exciting careers in science, mathematics, and engineering.

As Assistant Director for Programs on NASA's U.S. Centennial of Flight Commission, Debbie Gallaway is responsible for encouraging programs, projects and events that will involve, educate, enrich, and inspire as many people as possible, particularly educators and students, to participate in the commemoration of the centennial of powered flight.

COMING ATTRACTIONS

NCASE 2004

The 37th annual National Congress will be held in Atlanta, Georgia, on March 24-27, 2004 at the Atlanta Marriott Marquis Hotel. The theme of "Teaching Today for Tomorrow" will project the Classroom to Careers objective. Many well-known speakers in the aerospace community, as well as National Standards-based break-out sessions, will inspire educators to motivate their students in science, math, and technology for future careers. Register today and become a part of the premier aerospace education conference in the nation! To find out more, go to:

http://www.capnhq.gov/conference/pages/nc/nationalcongress.html

AE PROGRAM UPDATES

3, 2, 1. . . BLAST OFF!

HQ CAP Aerospace Education staff are finalizing a new Model Rocketry Program for our cadets. Dr. Ben Millspaugh, the Rocky Mountain region's Regional Director of Aerospace Education, developed the curriculum. We are currently designing the layout, graphics, and editing the curriculum. It should be ready for printing in July and ready for distribution to the field by September.

The new rocket program will replace the current one, and will therefore require changes to CAPR 50-20. Those changes will be accomplished soon. This new program will contain a written phase and a hands-on phase in three progressively more challenging stages. A cadet will receive a certificate of completion after each of the first two stages and can wear the rocket badge after successfully completing the third stage.

This program takes off where *Aerospace Dimensions* Module 4, *Rockets*, ends. We are excited to bring this program to you and know you will like it too.

IN THE AEM SPOTLIGHT...

Edie Magerkurth

By Steve Williams, Pacific Region RDAE

We will highlight an outstanding Aerospace Education Member of the Civil Air Patrol in each newsletter. Our inaugural article spotlights **EDIE MAGERKURTH**, a retired school administrator who resides in Merced, located in California's central farmlands of the San Joaquin Valley. After completing her education at Oberlin College in Ohio, Edie taught school (K-12) and served as both a guidance counselor and as a high school vice-principal and dean.

In the mid 1990s, when nearby Castle Air Force Base closed, Edie worked hard to convert a hangar into a Challenger Center dedicated to space science education for fifth through ninth grade students, eventually expanding it through all grade levels. Several years before the ribbon cutting ceremony for the center, Edie worked to implement a program called Project Marsville.The Castle Challenger Learning Center Foundation's Marsville Program brought in students from the Central Valley, stretching 300 miles from Sacramento to Bakersfield. The student teams from the participating schools designed a support system for their Mars habitat and conducted outer space planetary research. Students built an interconnected habitat of huge, translucent cubes made from plastic sheets and duct tape inside the retired Castle Air Force Base hangar.

Over the years, Edie has continued to implement Marsville; she also developed the first distance learning version of the program. To date, more than 5,000 students have participated in Project Marsville.

Edie has been responsible for initiating a Boy Scout Merit Badge Aviation Workshop as well as aerospace education workshop for teachers. Additionally, she implemented an aerospace careers study.

She has served as vice-president of the California Air Force Association and on the Aerospace Education Foundation's National Board of Trustees. She has been awarded the AEF's George Hardy Award for Excellence in Aerospace Education in 1997, and received the National Dunn and Bradstreet Customer Service Award.

In addition to the many contributions to aerospace education, Edie is involved in teaching aviation lessons for the local Civil Air Patrol cadet aerospace education program. To facilitate this effort, she published a book called *This Day in Aviation And Aviation History*, a daily listing of aerospace events in history for each day of the year.

Edie Magerkurth makes an outstanding contribution to aerospace education and impacts the lives of countless students and cadets.

TEACHER GRANTS

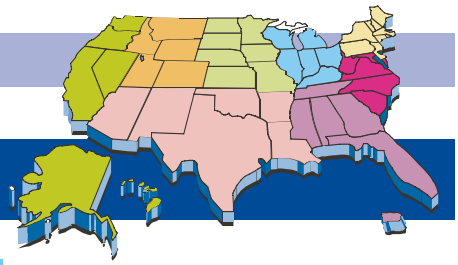
The Aerospace Education Foundation of the Air Force Association sponsors grants for CAP teacher members for $250 each. The fall deadline for these grants is September 30. They also offer teachers, who are not currently Aerospace Education Members with CAP, memberships in this exciting program.

For more information concerning AEF and the grant offers, go to http://www.capnhq.gov/nhq/aeroed/ETA/AE_Grants.htm.

Answers to Cappy's Quiz

1. The first flight lasted for 12 seconds.
2. The flight distance was 120 feet.
3. The final flight lasted 59 seconds and covered 852 feet.

REGION TO REGION



NORTHEAST REGION

July 28 - August 17 - GE Presents Centennial of Flight (COF) at Rockefeller Center, beginning at 10:00 am. The air show is being presented to honor the Centennial in the spirit of the Wright Brothers' brilliant creativity. The event will present the historical, political and social growth of aviation, beginning with the miraculous first flight and leading up to the most current, awe-inspiring discoveries of the day. Combining objects from NASA, U.S. Air Force, Naval Aviation, EAA and the Smithsonian's National Air and Space Museum, among others, the display will offer a celebration of the greatest achievements in aviation innovation and future endeavors.

For more news about events in the Northeast Region, contact Dr. Ann Walko, (609) 754-2967; or email at: edudoc98@aol.com.

MIDDLE EAST REGION

Conferences and Workshops:

July 16-23 - The second annual CAP/American Institute of Aeronautics and Astronautics (AIAA) sponsored Aerospace Education Workshop for teachers will be held at Andrews AFB, MD. For more information, please contact Claudine Sayegh, MER/DAE at: claudine.sayegh@andrews.af.mil.

August 13-15 - The first annual Aeronautics-Astronautics Workshop for teachers, co-sponsored by Averett University/NASA LARC/ CAP will be held in Danville, VA at the Danville Science Center and at Danville Regional Airport. For more information, please contact Thomas Vick at (434) 791-5755 or email thomas.vick@averett.edu.

GREAT LAKES REGION

Workshops

July 4-20 - The Centennial of Flight will have pavilions at Deeds Point in Dayton, Ohio.

July 11 - On Air Force Day, the Civil Air Patrol aerospace activities will be a part of the Educational Outreach Exhibit.

July 16 - At the Dayton Airport, Project SOAR will present nationally recognized speakers and concurrent sessions including a session presented by the Aerospace Education team focusing on the Wright Bat, the toy of the Wright brothers.

July 24 - EAA Oshkosh will host Wisconsin teachers during the EAA Air Show. Civil Air Patrol Aerospace Education will present a concurrent session on the Wright brothers.

August 4-15 - Science in Ohio through Aerospace Education (limited to Ohio teachers). For further information, contact Judith Wehn at (937) 255-8048 ext. 334.

For more events and information, contact Ms. Alice Noble, (937) 257-3600 or email:Alice.Noble@wpafb.af.mil.

SOUTHEAST REGION

Conferences, Workshops, and Air Shows:

July 8-11 - A teacher workshop will be held for the Dade County School System in Miami, Florida.

July 21-23 - The Alabama Aerospace Teachers Association Conference will be held at the University of Alabama, Huntsville campus.

August 9-10 - There will be an air show at Dobbins AFB in Marietta, Georgia.

For more information about these and other events in the southeast region, contact Ms. Kathy Baucum (334) 953-4213; serdae@msn.com.

NORTH CENTRAL REGION

Effective Visit

Following a visit by CAP RDAE, the South Dakota Department of Education's Deputy Secretary promoted CAP and the AEM program through an electronic message to schools and district superintendents throughout South Dakota.

For more information on other activities in the North Central Region, contact Mr. Dennis Yeager (612) 713-1471or email at: dennis.yeager@minneapolis.af.mil.

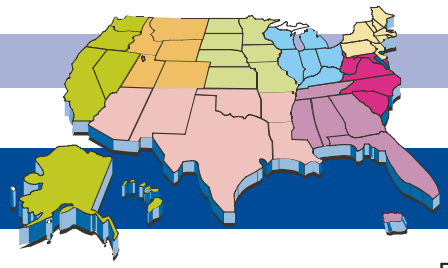
SOUTHWEST REGION

Embry-Riddle Aeronautical University and AeroRacers Inc. have teamed up to present the first annual Great American Aero Derby (GAAD). In July, over $25,000 in scholarships will be awarded to the top competitors. The GAAD competition is designed to introduce students and educators to the exciting world of aviation. Educators are invited to participate in hands-on, brains-on, workshops to help integrate aerospace into the curriculum.

July 21-24 - Educators will receive training at the Embry-Riddle Prescott campus to successfully incorporate GAAD into the classroom. Texas Christian University credit is available.

For more information, log on to www.aeroderby.com.

For more information on activities in this region, contact Beth White at: swrdae@msn.com.



REGION TO REGION

ROCKY MOUNTAIN REGION

AEX Program Offers College Credit in Colorado - A group of teachers, from five states, just completed a program with Adams State College, Alamosa, Colorado, where they received one hour of graduate credit for participating in the AEX program. Thirty-eight teachers enrolled in the class and finished the semester course on May 9, 2003. All of the enrollees did the required six activities and a field experience over a period of five months. To find out more about the college credit program for AEX in the Rocky Mountain Region, contact Dr. Ben Millspaugh (303) 795-3656 or email: bentonae@msn.com.

Congratulations to Kaiser Elementary School in suburban Denver, Colorado for being one of the first in the country to have 100% of the faculty enroll as AEMs. The school is setting plans in motion to become a science and math magnet school and the entire faculty plans to implement the AEX program at all levels, K-6.

PACIFIC REGION

Conferences and workshops:

August 25-27 - CAP National Board and Conference will be held in Las Vegas at the MGM Grand Hotel. To register or find out more, go to: http://www.capnhq.gov/conference/pages/nb/national-board.html.

September 23-25 - The AIAA (American Institute of Aeronautics and Astronautics) Space 2003 Conference, will be held in Long Beach, CA. For more information, go to http://www.aiaa.org/space2003/.

October 10 -11 - Pacific Region CAP Aerospace Education Conference for teachers, CAP members and CAP Aerospace Education staff is scheduled for the Evergreen Aviation Museum (home of the famous Howard Hughes "Spruce Goose" Flying Boat) in McMinnville, Oregon. For additional information, please contact Mr. Steve Williams, (530) 634-9521, or email stevew@beale.af.mil and leave your name and mailing address so that an informational flyer may be mailed to you.

AEO NEWS AND VIEWS

MISSION AWARDS

The Aerospace Education Mission Awards recognize the most outstanding wing aerospace education programs in each of the regions.

The Aerospace Education National Mission Award winners for 2002 are:

First Place - Florida
Second Place - California
Third Place - Texas

The Regional Award winners are:

Northeast - New York
Middle East - National Capital
Great Lakes - Michigan
Southeast - Florida
North Central - Minnesota
Southwest - Texas
Rocky Mountain - Colorado
Pacific - California

AEF UNIT GRANTS

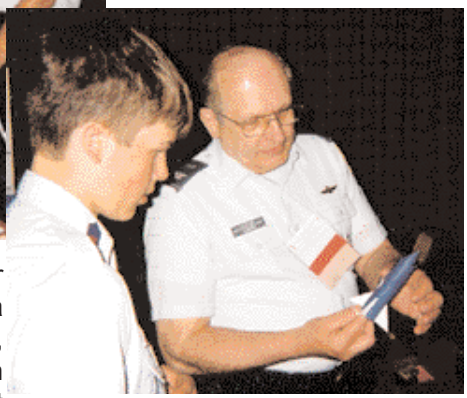
The Aerospace Education Foundation (AEF) of the Air Force Association provides educational opportunities for America's youth. Part of their program gives CAP units the opportunity to receive grant money once every other year. Each unit selected will receive a $250 grant for their aerospace program. Since 1996 the AEF has provided over $85,000 to CAP units and CAP Aerospace Education Members to help fund their aerospace education programs.

The next CAP unit grant cycle ends June 30, 2003. Due to CAP headquarters staff travel commitments, applications for grants will not be reviewed until the first part of July. So, you have until 15 July to send in your application. For details and the application form, go to http://www.capnhq.gov/nhq/aeroed/ETA/AE_Grants.htm.

2003 NCASE THANKS

The CAP Headquarters Aerospace Education staff would like to take this opportunity and thank the wonderful volunteers from CAP Ohio Wing and the Great Lakes Region for all of the expert assistance they provided at the recent NCASE in Cincinnati, Ohio. The success of this conference can greatly be attributed to their marvelous help and support. We truly could not have held this conference without them.

AEO IN THE SPOTLIGHT



Col Kevin Sliwinski, CAP

With this inaugural edition of our newsletter, we are introducing a section which will profile a DAE, AEO, or someone involved with CAP aerospace education. This first profile is on CAP Colonel Kevin Sliwinski, the Minnesota Wing Director of Aerospace Education. Someone recently asked him "What has aerospace education done for you?" This caused Col. Sliwinski to reflect back on his aerospace career.

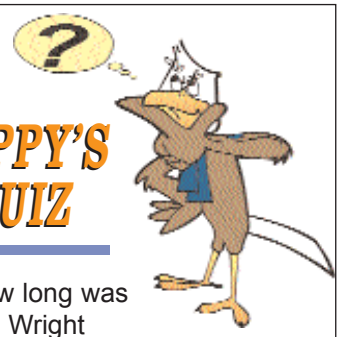
As Col Sliwinski related to us, he enlisted in the USAF, but qualified for pilot or navigator in the Aviation Cadet Program. Selected for navigator training, he became a 2nd Lieutenant and pinned on his navigator wings. A navigator on KC-97s and KC-135s, he later obtained a pilot's license through an Air Force Aero Club. Shortly after, the squadron commander of Peru Cadet Squadron in Indiana recruited him to provide the cadets with aerospace education. Col Sliwinski became the squadron commander of Bunker Hill AFB Cadet Squadron 6 months after being selected for Air Force Pilot training.

His next assignment took him to Alabama where he again became a squadron Aerospace Education Officer. Then he left for Vietnam to fly the F-100 Super Sabre. After 155 combat missions and one year, he rejoined his wife and children and headed for Lakenheath, England, to again fly the F-100. Next, he went to Oklahoma as an instructor pilot for T-37 students. At the same time, he was also the Aerospace Education Officer and then Squadron Commander for the local CAP unit. While there, he received his FAA Flight Instructor's Certificate, Instrument Certificate, and Multi-engine Instructor's Certificate. He also served as the Mission Coordinator on a CAP search for a friend who was killed in an experimental aircraft in Texas. Col Sliwinski said, "The loss of my friend dedicated me to Civil Air Patrol."

Col Sliwinski's other Air Force jobs included a Base Operations position, an assignment with the RC-135 reconnaissance aircraft, the scheduling officer for the President's Command and Control E-4 aircraft, a Logistics Officer, a Finance Officer, and a Deputy Wing Commander. After retiring from the Air Force, he received a master's degree from Embry-Riddle Aeronautical University and became the lead ground instructor of the Boeing 727 training program for Northwest Airlines.

In CAP, Colonel Sliwinski transferred to the Minnesota Wing, held various positions and then ascended to Wing Commander in 1997. After completing his tour as Wing Commander in 2000, he accepted the position of Chief of Staff Training for the Minnesota Wing. He retired from Northwest Airlines in September of 2001. Four of his children completed their Earhart Award and two completed their Spaatz Award, in the CAP Cadet Program.

As the current Director of Aerospace Education for the Minnesota Wing, Col Sliwinski said, "I feel blessed and thankful that I found CAP. 'What has Aerospace Education done for me' caused me to rejuvenate Aerospace Education in the Minnesota Wing. If I can make a difference in one youth's life, I have achieved my goal." ■



CAPPY'S QUIZ

1. How long was the Wright brother's first flight on December 17, 1903?
2. How far did the *Flyer* go before it settled on the sand?
3. How long was the *Flyer* in the air and how far did it go on the last flight that day?

Answers can be found in this newsletter on page 3 and in CAP's *Aerospace: The Journey of Flight* on page 19. Read more about the Wright brothers and early flight in chapters one and two of this book.

CURRICULUM CORNER

IT'S A HIGH FLYING KITE

(Courtesy of NASA "Why" Files series. For complete program called *The Case of the "Wright" Invention*, go to http://whyfiles.larc.nasa.gov/educators/index.html and download complete teacher's guide.)

Problem

- To learn how to make a kite

Materials

- thin twine/string
- transparent tape or glue
- 102-cm x 102-cm sheet of strong paper
- 90-cm wooden dowel or stick
- 102-cm wooden dowel or stick
- plastic bag
- scissors
- metric ruler
- markers or crayons to decorate the kite

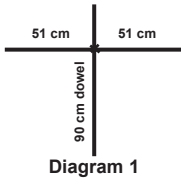


Diagram 1

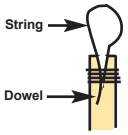


Diagram 2

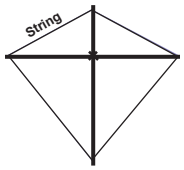


Diagram 3

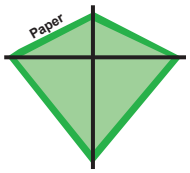


Diagram 4

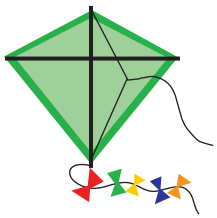


Diagram 5

Teacher Prep

Using a sharp knife, carefully make a deep notch on the ends of each stick.

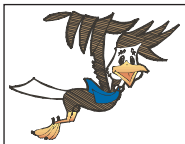
Procedure

1. Measure 51 cm from one end of the 102-cm dowel. Mark the spot with a marker or pencil.
2. Lay the 90-cm dowel across the top of the 102-cm dowel so that they form a cross at the spot marked above. See diagram 1.
3. Using string, tie the two sticks together, making sure that they remain at right angles to each other. To strengthen the connection, place a dab of glue at the joint.
4. Cut a piece of string long enough to fit around the kite frame and then add 10 cm.
5. On one end of the string, make a loop and tie a knot to secure the loop.
6. Place the string into the top notch of the kite frame, leaving the loop free. Wrap the string around the stick a few times to secure. See diagram 2.
7. Stretch the string through the notch in the cross piece and to the bottom notch (opposite of top with loop). Mark this point on the string. *Note: The string must be taut but not so tight that it makes the sticks bend.*
8. At that mark, make another loop and tie it off with a knot. Place the string with the loop into the bottom notch and secure by wrapping the string around the stick a few times.
9. Continue to stretch the string through the notch on the other end of the cross piece and back to the top.Tie off by wrapping the string around the dowel and tie off with a knot to secure. See diagram 3.
10. Cut off any excess string.
11. Decorate the center of your paper that will be used for the kite.
12. Lay the paper face down on a smooth flat surface and place the stick frame on top of the paper.
13. Cut the paper around the frame, leaving a 3-4 cm margin. For better accuracy, measure 3-4 cm from the frame and mark with a pencil; then remove the frame and cut along markings.
14. Fold the edges of the paper over the string frame and tape or glue it down, making sure that the paper is pulled tight. See diagram 4.
15. To make the kite's bridle, cut a piece of string about 125-cm long and tie one end of the string to the top loop.
16. Come down from the top about 1/3 of the way and make a small loop in the string just above the intersection of the two cross pieces. This section is where you attach the kite's string to fly the kite.
17. Tie the other end of the string to the bottom loop. See diagram 5.
18. To make a tail for the kite, cut a plastic bag into strips approximately 5 cm x 20 cm. Tie the strips to a piece of string, spacing them about 10 cm apart.
19. Attach the tail to the bottom loop.
20. Attach string to center loop of the kite's bridle.
21. Fly your kite and enjoy!

Extra Information:

As a child, Orville Wright was an expert at making kites. He often sold them to playmates for spending money. The children in the neighborhood loved his kites because they had such good flying qualities. That was because Orville made the frame so thin that it bent in the wind. Even though Orville was too young to realize that this curvature contributed greatly to the kite's good flying qualities, it aided him years later as he built kites that helped him to achieve successful flight.

* Note: This activity is a great way to practice metric measurement also.



Cappy Fact

The Wright Brothers' 1900 aircraft was flown repeatedly at Kitty Hawk, North Carolina, during the fall of 1900, mostly as a kite but also as a piloted glider.

THE INCREDIBLE, EDIBLE WRIGHT FLYER

Purpose

To create a model of the *Wright Flyer*

Materials

3 full-sized graham crackers
12-14 small pretzel sticks
frosting (quick-drying)
paper plate
one section of a Hershey's bar (to be the pilot)

Procedure

1. Following the perforations on the graham cracker, break one of them into four pieces. Set aside.
2. To build the wings of the plane: Dip a pretzel into the frosting so that you have a small amount of frosting on both ends. The frosting will act as glue.
   Place the pretzel in a perpendicular position on one corner of a full-sized graham cracker. Make sure that it is firmly attached by the frosting.
   Continue to dip pretzels into the frosting and place them on the graham cracker, as shown in diagram 1.
   Once you have all eight pretzels properly placed, put the second full-sized graham cracker on top. Press slightly to make sure that the frosting sticks.
3. To build the remaining section of the plane: Break two pretzel sticks in half.
   Dip both ends of one of the pretzels into the frosting.
   Place the pretzel in a perdendicular position on a corner of one of the graham cracker sections that you set aside in step 1.
   Repeat with the other three pretzel halves. See diagram 2.
   Once you have all four pretzels properly positioned, place a second graham cracker setion piece on top.
   Press slightly to make sure that the frosting sticks.
4. To connect the two sections, dip two pretzels in frosting and attach the wings to the other section as shown. See diagram 3.

Extension

Conduct an internet or library search for additional information on the Wright brothers' airplanes. Information may include how many different models they built, how their airplane changed with each model, or why they made changes to each plane.

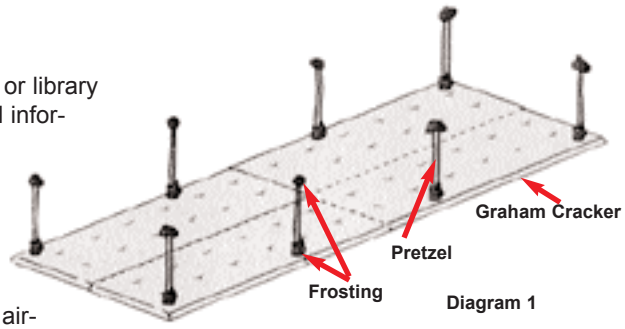


Diagram 1

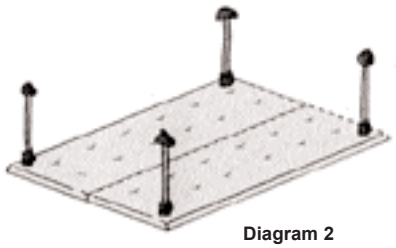


Diagram 2

*This activity can also be used to illustrate the persistence and patience that the Wright brothers exhibited in order to successfully accomplish

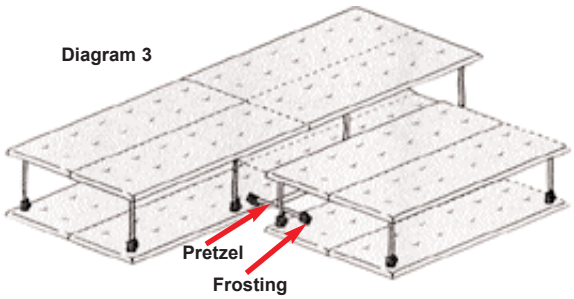


Diagram 3

(Courtesy of NASA "Why" Files series. For complete program called *The Case of the "Wright" Invention*, go to http://whyfiles.larc.nasa.gov/educators/index.html and download complete teacher's guide)

MIDDLE SCHOOL INITIATIVE (MSI)

MSI places CAP squadrons or flights into middle schools (6th through 8th grade) during the day or as an after-school activity with the support/assistance of a local host CAP unit. MSI maintains the same standards as the normal CAP Cadet Program, only the location, audience and time the program is conducted are different. This is an innovative attempt to reach students in a way that teaches respect, manners and accountability while developing their potential as tomorrow's leaders. This is a critical point in their development where it can influence future career decisions.

The most crucial component of the MSI program is its standardized curriculum. The curriculum consolidates all requirements into training schedules and lesson plans focusing on development of well-qualified cadets. Each session is two hours in length; there are 18 sessions per semester and 36 sessions per school year. Future editions will profile various MSI programs.

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